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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,250	07/05/2006	Noboru Ogasawara	292411US40PCT	6072

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ALI, MOHAMMAD M

ART UNIT	PAPER NUMBER
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3744

NOTIFICATION DATE	DELIVERY MODE
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02/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/585,250	Applicant(s) OGASAWARA, NOBORU	
	Examiner MOHAMMAD M. ALI	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-8, 11-12, 15 and 17 are rejected under 35 U.S.C. 102 (b) as being anticipated by Masahiro ET al (JP 10-205920 A). Masahiro et al disclose a condenser (23) comprising an inlet header (26a) and an outlet header (26b) spaced apart from each other in a left-right direction and extending vertically, a plurality of fiat refrigerant tubes (27 arranged one above another in parallel at a spacing between the two headers (26a and 26b) and jointed at opposite ends thereof to the respective headers and fins provided between respective adjacent pairs of refrigerant tubes, the inlet header (26a) having a refrigerant inlet (35) for admitting a refrigerant into interior thereof therethrough, the outlet header (26b) having a refrigerant outlet (34) for causing the refrigerant to flow out therethrough, the refrigerant as admitted into the inlet header (26a) through the inlet (35) being flowable through all the refrigerant tubes (27) toward the outlet header (26b), the refrigerant tubes (27) are positioned above and below the center of the refrigerant inlet (35) with respect to the vertical direction, and the number of refrigerant tubes positioned below the center of the refrigerant inlet (35) with respect to the vertical direction being is 2 or more and less than 21. (the tube number being up to 21, indicates the upper limit is 21 and there is no specific lower limit, the number of tube under inlet 35 of Masahiro et al does not exceed

Art Unit: 3744

21 similar to the claimed invention as supported by Figs of the Applicant); fins (28), different tube groups as shown by the blocks with arrows; a liquid tank (25), filter dryer (20). See Figs 1, 4, 5 and 6 and enclosed translation..

Regarding claims 1 and 6, the above disclose of Masahiro et al meet the limitations of claims 1 and 6.

Regarding claims 2 and 7, Masahiro et al disclose that the number of refrigerant tubes positioned below the center of the refrigerant inlet (25) with respect to the vertical direction is 6 as shown in Fig 1 and which does not exceed the up to 7 number.

Regarding claims 3 and 8, Masahiro et al disclose that total number of refrigerant tubes are 31 as shown in Fig 6 which between the number 22 to 70.

Regarding claims 11 and 12, Masahiro et al disclose that a heat exchanger having a condenser (23) portion comprising supercooler portion (24) disposed under the condenser portion (23) and comprising a pair of headers (26a and 26b) spaced apart from each other in a left-right direction and extending vertically, a plurality of fiat refrigerant tubes (27) arranged one above another in parallel at a spacing between the two headers (26a and 26b) and jointed at opposite ends thereof to the respective headers and fins (28) provided between respective adjacent pairs of refrigerant tubes (27), the outlet header (26b) of the condenser portion (23) being provided with one of the headers of the supercooler portion (24) with a partition (see Fig 1) interposed therebetween, the inlet header of the condenser (23) portion being provided with the other header of the supercooler portion with a partition interposed therebetween, a receiver tank (25) being attached to both the outlet

Art Unit: 3744

header of the condenser portion (23) and said one header of the supercooler portion (24), the refrigerant as discharged from the refrigerant outlet of the condenser portion being flowable into said one

Regarding claims 15 and 17 Masahiro et al disclose an air conditioning or refrigeration system circuit. See Fig 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahiro et al in view of Yamamoto et al (US 6,125,922), HU (US 20040261983 A1) and Kraft (US 20020070012 A1). Masahiro et al disclose the invention substantially as claimed as stated above condenser height, width/length, tube height/thickness and tube spacing (fin height). Yamamoto et al teach the use of a condenser height of 387.8 mm (within limit 150 to 500 mm of claimed invention), a left-right width/length of (300 to 700

Art Unit: 3744

mm, within the limit of 200 to 800 mm of claimed invention) in an condenser device for the purpose of maximizing the design criteria and working efficiency, see Fig. 2, 4-5, column 3, lines 19-65 ; Kraft teaches the use of tube thickness of 1.33 mm (within the limit of 08 to 3 mm of claimed invention) in designing an heat exchanger for having an optimum efficiency, see Para [0006].; Hu teaches the use of fin height of 10 mm (the spacing of tubes 28 in designing a heat exchanger for maximizing its efficiency, see claim 2. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the condenser device of Masahiro et al in view of Yamamoto et al and Hu such that condenser with height of 387.8 mm, left-right width/lent of 150 to 500 mm, a tube thickness of 1.33 and tube spacing of 10 mm could be provided in order to efficiently functioning the condensing or heat exchanging function.

Claims 5, 10, 13, 14, 16, 18, 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahiro et al in view of Iso et al (JP 2003-106338 A).

Masahiro et al disclose the invention substantially as claimed as stated above except 3 to 10 mss % of compressor lubricating oil admixed. Iso et al teach the use of compressor oil with .1 to 20 mass % with admixed of organometallic salt for having an efficient rust proof oil. See Abstract. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the condenser device of Masahiro et al in view of Iso et al such that an lubrication /compressor oil with .1 to 20 mass % of organometallic salt could provided in order to efficient and rust proof working.

Response to Arguments

Applicant's arguments filed 10/05/09 have been fully considered but they are not persuasive. The Applicant argues that JP '920' does not disclose refrigerant tubes arranged between the inlet and outlet headers and joined at opposite ends where the inlet header has refrigerant inlet and outlet header has a refrigerant outlet such that the refrigerant flows through all the refrigerant tubes towards the outlet header, the refrigerant tubes are positioned above and below the center of the refrigerant inlet with respect to the vertical direction, and the number of the refrigerant tubes positioned below the center of the refrigerant inlet with respect to the vertical direction is 2 or more and less than 21.

The Examiner disagrees. All those elements have been specifically discussed in the claim rejection above. However for the sake of argument the Examiner states that refrigerant tubes (27) arranged between the inlet header (26a) and outlet header (26b) and joined at opposite ends (see the tubes 27 are joined at opposite ends with the headers 26a and 26b) where the inlet header (26a) has refrigerant inlet (see the inlet arrow heading to the inlet header 26a from the inlet 35) and outlet header has a refrigerant outlet (see outlet 36) such that the refrigerant after entering the inlet header (26a) flows through all the refrigerant tubes (27) towards the outlet header (26b, see Fig. 1), the refrigerant tubes are positioned above and below the center of the refrigerant inlet (35) with respect to the vertical direction, and the number of the refrigerant tubes positioned below the center of the refrigerant inlet with respect to the vertical direction is 2 or more (4 as seen in Fig 1) and less than 21. See Fig. 1

The above disclosure is valid both for claim 1 and claim 6.

Therefore, the rejections are ok.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD M. ALI whose telephone number is (571)272-4806. The examiner can normally be reached on maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4808. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mohammad M Ali/
Primary Examiner, Art Unit 3744